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U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

TECHNICAL NOTE

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PRESSURE DROP ASSEMBLY FOR PIPELINE

In an attempt to lessen the cost of water-pressure measurement and increase its effectiveness, the use of an inexpensive pre-cast concrete water meter box with float valve and removable cast-iron cover has been jointly suggested by Safford District employees Clifton A. Gridley, Robert C. Brown, and Mark W. McBride.

The use of expensive pressure relief valves or costly, high pressure pipe can in some cases, be supplemented by the use of a pre-cast concrete water meter box with significant savings in installation time and materials cost.

For the installation of the pre-cast concrete metal-box, it is suggested that the following steps be followed:

1. Excavation at site will vary with local conditions such as slope of ground, type of soil, etc., but object is to set box level and firm so that no relative motion occurs between box and inlet and outlet pipe. Box shall be buried so that approximately 1" is above ground. Pipe should be already attached to pipeline before installing in box, this may prevent injuring the green concrete.

2. Make sure inlet pipe is flowing free and clear of dirt. The gate valve should be closed, elbows should be in place with plug in outlet end until concrete pour has been accomplished. Float valve should be screwed into bushing on inlet elbow. At this point make sure there is clearance between side of box and valve as it may have to be removed and replaced later. The brass ball and adjustable arm should not be assembled at this time, see Step 5. Alignment and position of pipe entering holes in box should be adjusted so that float valve will operate properly and 5" or 6" ball does not touch sides of box.

3. After pipe is set in box, partially backfill with available aggregate in pipe trenches around box as well as inside box. Rock should be brought to site if none is available. See drawing for height of concrete inside box. There should be enough concrete poured to make the box watertight and to hold the pipes in place.

4. Mix and pour part of the concrete forming a pad for bottom of box. Pour the rest of the mixed concrete, grouting the holes where the pipe enters the box so that they are watertight. See drawing, etc.

5. The concrete should be kept moist until it is cured. After the concrete is set, remove the plug from the outlet and replace with

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nipple and clamp on screen assembly. Be sure box is clean of debris. Attach brass ball and rod to the float valve. Adjust height of ball for proper water level. Open gate valve and after checking the operation of float valve, replace cover on box.

REMARKS Installation time, excluding excavation is approximately 1 1/2 hours using dry pre-mix concrete.

Bill of Materials

1 concrete meter box - approximately 1' x 1'-5" x 11" high, with cast iron lid.

2 pipe, 1" galvanized - 2 lengths - 18" and 30"

Valves - 1 - 1" gate valve 1 - 3/4" float valve - with adjustable arm and 5" or 6" brass ball.

2 elbows 1" - 90°

2 adaptors - 1 " steel to plastic pipe

1 plug - 1"

1 nipple - 1" with copper screen and clamp

1 bushing reducer 1" to 3/4"

1 coupling - 1" (for adaptor at outlet side)

1 dry mix - bag of concrete ready mix (75#)

Rock - quantity - 1 1/2" max. size aggregate

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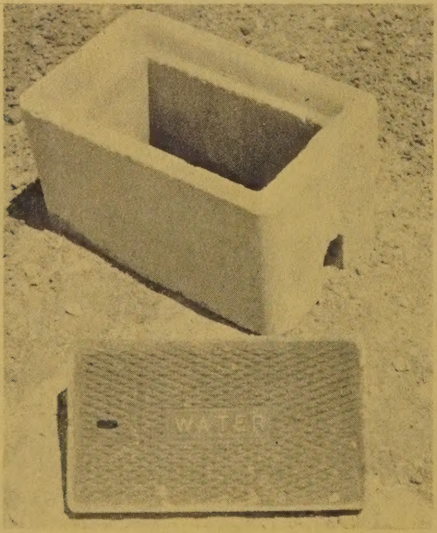

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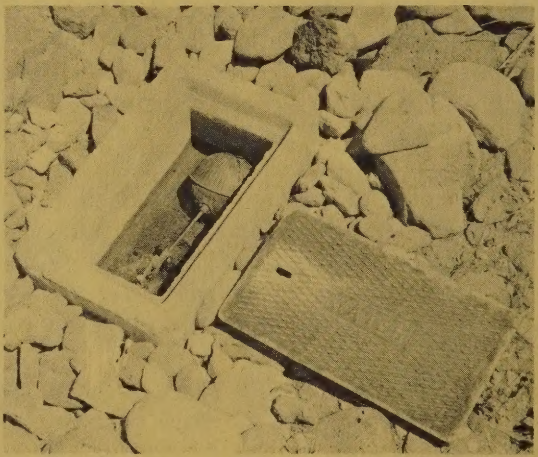
Standard Pre-cast Water Meter Box with removable cast iron cover.



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Fully installed Pressure Release Box